

a rotatable disk scanner having a plurality of pinholes  
5 formed in a disk for the light beam to pass therethrough between  
said light-emitting portion and the specimen, said pinholes being  
arranged to move through a first position facing said  
light-emitting portion and scan the specimen with the light beam  
having passed through said pinholes, along with rotation of said  
10 disk scanner;

a confocal optical system for conjugating said first  
position and a second position on the specimen to cause the light  
beam having passed through said pinholes to be radiated onto the  
specimen, and to cause a light beam from the specimen to form an  
15 image on said disk;

a camera for photographing a still image of the image formed  
by said confocal optical system;

means for generating an exposure time signal representing an  
exposure time of said camera;

20 means for generating a rotational period signal representing  
a rotational period of said disk scanner; [and]

means for comparing the exposure time signal with the  
rotational period signal to generate based on a comparison result  
a signal concerning at least one certain condition which must be  
25 changed among conditions of said disk scanner, said confocal  
optical system, and said camera[.];

wherein said certain condition comprises a rotational speed  
of said disk scanner;

30  
Cont'd  
A1  
means for automatically changing said certain condition on  
the basis of the comparison result; and

means for switching whether to control the rotational speed  
of said disk scanner in association with the exposure time.

38. (Amended) [The] A confocal microscope apparatus  
[according to claim 4, further] comprising:

a light-emitting portion for emitting a light beam with  
which a specimen to be observed is irradiated;

5 a rotatable disk scanner having a plurality of pinholes  
formed in a disk for the light beam to pass therethrough between  
said light-emitting portion and the specimen, said pinholes being  
arranged to move through a first position facing said  
A2  
10 light-emitting portion and scan the specimen with the light beam  
having passed through said pinholes, along with rotation of said  
disk scanner;

a confocal optical system for conjugating said first  
position and a second position on the specimen to cause the light  
beam having passed through said pinholes to be radiated onto the  
15 specimen, and to cause a light beam from the specimen to form an  
image on said disk;

a camera for photographing a still image of the image formed  
by said confocal optical system;

means for generating an exposure time signal representing an  
20 exposure time of said camera;

means for generating a rotational period signal representing a rotational period of said disk scanner;

25 means for comparing the exposure time signal with the rotational period signal to generate based on a comparison result a signal concerning at least one certain condition which must be changed among conditions of said disk scanner, said confocal optical system, and said camera;

*Cont'd*  
*A2*  
means for automatically changing said certain condition on the basis of the comparison result;

30 wherein said certain condition comprises a rotational speed of said disk scanner; and

a rotation sensor for detecting a rotational position of said disk scanner, and wherein the rotational period signal is calculated based on a detection result by said rotation sensor.

---

*6/8* 8. (Amended) [The] A confocal microscope apparatus [according to claim 2,] comprising:

a light-emitting portion for emitting a light beam with which a specimen to be observed is irradiated;

*A3*  
a rotatable disk scanner having a plurality of pinholes formed in a disk for the light beam to pass therethrough between said light-emitting portion and the specimen, said pinholes being arranged to move through a first position facing said light-emitting portion and scan the specimen with the light beam

10 having passed through said pinholes, along with rotation of said  
disk scanner;

a confocal optical system for conjugating said first  
position and a second position on the specimen to cause the light  
beam having passed through said pinholes to be radiated onto the  
15 specimen, and to cause a light beam from the specimen to form an  
image on said disk;

a camera for photographing a still image of the image formed  
by said confocal optical system;

Cont'd  
20 means for generating an exposure time signal representing an  
exposure time of said camera;

A3 means for generating a rotational period signal representing  
a rotational period of said disk scanner;

means for comparing the exposure time signal with the  
rotational period signal to generate based on a comparison result  
25 a signal concerning at least one certain condition which must be  
changed among conditions of said disk scanner, said confocal  
optical system, and said camera;

30 wherein said certain condition comprises an intensity  
of the light beam emitted by said light-emitting  
portion[.]; and

means for automatically changing said certain condition on  
the basis of the comparison result.

A4 8. (Amended) The apparatus according to claim 7, further

comprising photometric means for measuring the intensity of the light beam from the specimen, and wherein the exposure time signal is calculated based on a detection result by said  
5 photometric means.

10  
11. (Amended) An apparatus for photographing a confocal image in cooperation with a microscope, comprising:

Cont'd  
AH  
5 a light-emitting portion for emitting a light beam with which a specimen to be observed is irradiated;

a rotatable disk scanner having a plurality of pinholes formed in a disk for the light beam to pass therethrough between said light-emitting portion and the specimen, said pinholes being arranged to move through a first position facing said light-emitting portion and scan the specimen with the light beam  
10 having passed through said pinholes, along with rotation of said disk scanner;

an optical system portion for forming, in cooperation with an optical system portion of said microscope, a confocal optical system for conjugating said first position and a second position  
15 on the specimen to cause the light beam having passed through said pinholes to be radiated onto the specimen, and to cause a light beam from the specimen to form an image on said disk;

a camera for photographing a still image of the image formed by said confocal optical system;

20 means for generating an exposure time signal representing an exposure time of said camera;

means for generating a rotational period signal representing a rotational period of said disk scanner; [and]

25 means for comparing the exposure time signal with the rotational period signal to generate based on a comparison result a signal concerning at least one certain condition which must be changed among conditions of said disk scanner, said confocal optical system, and said camera[.];

Cont'd  
A4  
30 wherein said certain condition comprises a rotational speed of said disk scanner;

means for automatically changing said certain condition on the basis of the comparison result; and

means for switching whether to control the rotational speed of said disk scanner in association with the exposure time.

---

12  
16. (Amended) [The] An apparatus for photographing a confocal image in cooperation with a microscope, [according to claim 14, further] comprising:

A5  
a light-emitting portion for emitting a light beam with which a specimen to be observed is irradiated;

a rotatable disk scanner having a plurality of pinholes formed in a disk for the light beam to pass therethrough between said light-emitting portion and the specimen, said pinholes being arranged to move through a first position facing said

10 light-emitting portion and scan the specimen with the light beam  
having passed through said pinholes, along with rotation of said  
disk scanner;

15 an optical system portion for forming, in cooperation with  
an optical system portion of said microscope, a confocal optical  
system for conjugating said first position and a second position  
on the specimen to cause the light beam having passed through  
said pinholes to be radiated onto the specimen, and to cause a  
light beam from the specimen to form an image on said disk;

20 a camera for photographing a still image of the image formed  
by said confocal optical system;

means for generating an exposure time signal representing an  
exposure time of said camera;

means for generating a rotational period signal representing  
a rotational period of said disk scanner;

25 means for comparing the exposure time signal with the  
rotational period signal to generate based on a comparison result  
a signal concerning at least one certain condition which must be  
changed among conditions of said disk scanner, said confocal  
optical system, and said camera;

30 wherein said certain condition comprises a rotational speed  
of said disk scanner;

means for automatically changing said certain condition on  
the basis of the comparison result; and

cont'd  
35 AS  
a rotation sensor for detecting a rotational position of said disk scanner, and wherein the rotational period signal is calculated based on a detection result by said rotation sensor.

18. (Amended) [The] An apparatus for photographing a confocal image in cooperation with a microscope, [according to claim 12,] comprising:

5 a light-emitting portion for emitting a light beam with which a specimen to be observed is irradiated;

A6  
10 a rotatable disk scanner having a plurality of pinholes formed in a disk for the light beam to pass therethrough between said light-emitting portion and the specimen, said pinholes being arranged to move through a first position facing said light-emitting portion and scan the specimen with the light beam having passed through said pinholes, along with rotation of said disk scanner;

15 an optical system portion for forming, in cooperation with an optical system portion of said microscope, a confocal optical system for conjugating said first position and a second position on the specimen to cause the light beam having passed through said pinholes to be radiated onto the specimen, and to cause a light beam from the specimen to form an image on said disk;

20 a camera for photographing a still image of the image formed by said confocal optical system;



means for generating an exposure time signal representing an exposure time of said camera;

means for generating a rotational period signal representing a rotational period of said disk scanner;

25 means for comparing the exposure time signal with the rotational period signal to generate based on a comparison result a signal concerning at least one certain condition which must be changed among conditions of said disk scanner, said confocal optical system, and said camera; and

30 means for automatically changing said certain condition on the basis of the comparison result; and

wherein said certain condition comprises an intensity of the light beam emitted by said light-emitting portion.

A7 17  
20. (Amended) The apparatus according to claim 16, further comprising photometric means for measuring the intensity of the light beam from the specimen, and wherein the exposure time signal is calculated based on a detection result by said  
5 photometric means.

[Please add new claims 21-24, as follows:]

A8 21. The apparatus according to claim 3, further comprising means for displaying a message for instructing a change of said certain condition on the basis of the comparison result.

<sup>9</sup>  
~~22~~. The apparatus according to claim <sup>6</sup>~~8~~, further comprising means for displaying a message for instructing a change of said certain condition on the basis of the comparison result.

<sup>14</sup>  
~~23~~. The apparatus according to claim <sup>12</sup>~~16~~, further comprising means for displaying a message for instructing a change of said certain condition on the basis of the comparison result.

<sup>18</sup>  
~~24~~. The apparatus according to claim <sup>6</sup>~~18~~, further comprising means for displaying a message for instructing a change of said certain condition on the basis of the comparison result.--

---